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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/776,198	02/12/2004	Seung Gyu Lee	K-0609	2762

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EXAMINER
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SEVER, ANDREW T

ART UNIT	PAPER NUMBER
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2851

DATE MAILED: 02/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/776,198

Applicant(s)

LEE, SEUNG GYU

Examiner

Andrew T. Sever

Art Unit

2851

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5,7-11 and 14-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5,7-11,14,15,17,18,20-22 and 24-26 is/are rejected.
- 7) ☒ Claim(s) 16,19 and 23 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Drawings***

1. The drawings were received on 2/12/2004. These drawings are acceptable.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 3-5, 7, 8, 10, 11, 14, 15, 17, 18, 20-22, and 24-26 are rejected under 35 U.S.C. 102(b) as being anticipated by Sawamura et al. (US 2002/0122156 as cited in the previous office action.)

Sawamura teaches in figure 1 a projecting optical system, comprising:

A lamp (1) configured to irradiate light;

A color divider (2) configured to divide colors of light irradiated from the lamp;

An illumination mixer (3) configured to irradiate the light received from the color divider with equal light intensity;

A channel-changing prism (9) configured to receive light irradiated from the illumination mixer and to provide a predetermined distance between an axis of incidence

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light and an axis of light emitted by the channel-changing prism; (Clearly the incident light and emitted light axis are not co-linear and therefore a predetermined distance can be calculated between any two points on the lines by ordinary algebra.)

A TIR prism (6) for changing a direction and angle of light to a predetermined direction and angle.

*With regards to applicant's claim 3:*

Lenses 4c and 4b have the channel-changing prism (9) situated between them.

*With regards to applicant's claim 4:*

Part 2 is a color wheel, which is a disk with color filters on it that rotates.

*With regards to applicant's claims 5 and 7:*

The light entering the prism is emitted in an almost perpendicular direction.

*With regards to applicant's claims 8, 10, 11, and 14:*

See above with regards to claims 1, 3, 4, and 7 respectively and note that Sawamura's projecting optical system described above is disclosed as part of a projector, which among other things includes a DMD panel (7).

*With regards to applicant's claim 15:*

See paragraph 25.

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*With regards to applicant's claims 17 and 20:*

The emitted light has both vertical and horizontal components and accordingly the distance includes substantially vertical components.

*With regards to applicant's claims 18 and 21:*

The planes that RT and RM directly point to are substantially parallel and are responsible for the distance between the axis of incidence light and emitted light.

*With regards to applicant's claims 22, 24-26:*

See above, specifically with regards to claims 1, 17, 18, and 8 respectively.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sawamura et al. (US 2002/0122156) as applied to claims 1 and 8 above, and further in view of Mihalakis (US 6,375,330.)

As described in more detail above Sawamura teaches a projection optical system that among other thing includes a lamp and a color divider, however Sawamura does not

teach the use of a reflective mirror for changing the channel of light irradiated from the lamp as it enters in to the color divider. Mihalakis teaches in figure 1 a mirror 55 for redirecting light from the light source to the light engine (62). Mihalakis teaches in column 32 lines 23-35 that the use of mirror (22 which is not labeled but from the description would correspond to the mirror on which point 55 is at) that the optical engine (all those parts after the lamp which in the case of Sawamura would include the color divider) can be oriented with respect to the light source in such a manner as to fit better in the optical case or make it more compact. Since this is desirable it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the reflective mirror of Mihalakis in the projection optical system of Sawamura in order to make it easier to assemble with regards to the case.

***Allowable Subject Matter***

6. Claims 16, 19, and 23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter: It is clear that the emitted axis of the Sawamura reference cannot reasonably be considered to be substantially parallel with the incidence axis. No prior art was found that would either alone or

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in an obvious combination with Sawamura teach this limitation in combination with the other limitations of these claims and the claims they are dependent upon.

***Response to Arguments***

8. Applicant's arguments filed 12/9/2005 have been fully considered but they are not persuasive.

Applicant argues that the rejection of claim 1 should be withdrawn because the Prism 9 of Sawamura bends the optical path at an obtuse angle. While this is true it does not prevent a distance to be calculated between any two points on the two axis which would be predetermined (as the axis do not move there would always be the same distance between them.) Applicant argues all other claims with respect to the above argument and since applicant's argument is not persuasive with regards to the independent claims, the rejection has been repeated with modifications to reflect applicant's amended language and new claims.

***Conclusion***

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew T. Sever whose telephone number is 571-272-2128. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on 571-272-2258. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



AS

**William Perkey**  
**Primary Examiner**



Serial No. 10/776,198

Reply to Office Action dated September 13, 2005

Docket No. K-0609

**Amendments to the Drawings:**

The attached drawings include changes to Figs. 3 and 5A-5B. These sheets, which include Figs. 3 and 5A-5B, replace the original sheets including Figs. 3 and 5A-5B. No new matter is added.

Attachments: Replacement Sheet  
Annotated Sheet Showing Changes

OK  
TG  
enter

AS

2/15/2006